HOUSE OF COMMONS

Environmental Audit Committee

Oral evidence: Aligning UK economic goals with environmental sustainability, HC 849

Wednesday 2 March 2022

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Watch the meeting

Members present: Philip Dunne (Chair); Duncan Baker; Barry Gardiner; Sir Robert Goodwill; James Gray; Caroline Lucas; Cherilyn Mackrory; Jerome Mayhew; John McNally; Dr Matthew Offord; Claudia Webbe.

Questions 59 - 130

Witnesses

I: Professor Kate Raworth, Co-founder and Conceptual Lead, Doughnut Economics Action Lab, and author of "Doughnut Economics"; Professor Henrietta Moore, Founder and Director, Institute for Global Prosperity, and Chair in Culture, Philosophy and Design, University College London; and Matthew Lesh, Head of Public Policy, Institute of Economic Affairs.

II: Liz McKeown, Director of Public Policy Analysis, Office for National Statistics; and Andy King, Member of the Budget Responsibility Committee, Office for Budget Responsibility.

Written evidence from witnesses:

– Doughnut Economics Action Lab

– Institute for Global Prosperity

– Matthew Lesh

– Office for National Statistics

Examination of witnesses

Witnesses: Professor Kate Raworth, Professor Henrietta Moore and Matthew Lesh.

Q59 **Chair:** Good afternoon. Welcome to the Environmental Audit Committee where we have our second oral evidence session into aligning the UK's economic goals with sustainability.

I am very pleased to welcome our first witnesses to the first panel. I would like you very briefly to introduce yourselves, starting with Professor Henrietta Moore from University College London.

Professor Moore: Thank you. I am Professor Henrietta Moore. I am the founder and director of the Institute for Global Prosperity at University College London. I was one of the Advisory Panel for the Dasgupta Review. I have just stepped down from doing six years on the Scientific Advisory Council for DEFRA.

Chair: And Kate Raworth, who I think has written a book on doughnut economics. You might explain what that means.

Professor Raworth: I will maybe do that later. It is a pleasure to join you. I am Kate Raworth. I am a Senior Associate at the Environmental Change Institute at Oxford University, Professor of Practice at Amsterdam University of Applied Sciences and the author of "Doughnut Economics".

Q60 **Chair:** Thank you. Could you explain what you mean by 'doughnut economics'?

Professor Raworth: Here is the doughnut. 'Doughnut economics' means that the shape of progress is not ever-rising growth, it is actually balance. It is meeting the needs of all people within the means of a living planet. We thrive when we are in this green doughnut space. It is the 'Goldilocks zone'; leave no one falling short, do not overshoot the limits of our planet. Simple, it is the 21st century goal.

Q61 **Chair:** Thank you. I am sure we will go into that in a bit more detail as we go on. Matthew Lesh from the Institute of Economic Affairs.

Matthew Lesh: Head of Public Policy at the Institute of Economic Affairs. I do not have any props today but thank you for the opportunity to present to the Committee. I do research and am interested in the market and environmental issues, and economic growth certainly forms an important part of that.

Q62 **Chair:** Thank you very much. You are all very welcome. I am going to start with a question initially to Matthew. We are all used to GDP as the primary metric for growth and being able to compare the growth of one economy against another. How useful do you think that remains as the primary methodology and do you think it can cope with the increasing demands we are placing on the way in which we view prosperity within our economies?

Matthew Lesh: GDP is a useful, although flawed, measure. It is the best measure we have of economic growth, except for all the other measures.

GDP was very much designed for a specific purpose around maintaining short-term employment as a Keynesian idea. It obviously has many issues, methodological issues, in terms of how to measure GDP and what does and does not count.

Where I think GDP does matter and what is worth putting in the defence of GDP is that overall humanity is better placed with the fact we have more GDP growth or bigger economies. That means individuals can consume a more expansive array and higher quality of products, spend more time in good health and live longer and more fulfilled lives.

More broadly, GDP does correlate very well with other good things that we like, be it general happiness and human satisfaction, longer life expectancy, declining malnutrition, literacy, numeracy, healthcare, medication and so on. You can have this temptation to throw out GDP as a measure without necessarily appreciating both its limits and value in terms of what it tells us about the state of our economy and economic growth.

Q63 **Chair:** Thank you. Kate, I have been reminded you are not meant to bring a prop into our evidence session so what I would like you to do is to take a photograph of it and send it to us as part of your evidence, or send the report indeed.

We have heard in our previous session how biodiversity loss and climate change is impacting the wellbeing of society and has impacts on the ability of society to cope with economic prosperity. Henrietta mentioned Dasgupta. We did a lot of work on biodiversity loss last year. The whole concept of natural capital and bringing that into the public accounting realm is a subject currently under review by the Treasury and we are going to be talking to them about it next week.

Could you give us your overview of whether you think GDP as a measure should be enhanced or do you think it should be replaced?

Professor Raworth: Thank you. Sorry, I did not realise I was not allowed to bring this but it is in the briefing that you will have.

I start by saying I respectfully, but strongly, disagree with what Matthew has just argued. It is true that GDP correlates with life expectancy and improved literacy at very low levels of income, countries that are up to around $15,000 per person per year. Yes, it makes a massive difference in Malawi and Bangladesh. When we get to high-income countries the correlation practically disappears. It is all about policy, it is all about distribution and investing in health and education. It is not about GDP growth. We are in one of the world’s richest countries. The idea that increasing our GDP growth is going to increase the things we most care about does not hold up on the evidence.

It is also the case that among high-income countries more GDP is leading to more carbon emissions, a bigger footprint on the world, when we take account of our emissions and footprint not just at home but our emissions around the world. Evidence shows that countries that have growing and high GDPs are the ones that are struggling the most to cut their carbon emissions on anything like the scale that is required.

When we come to the question you are asking me, I do not believe that modifying GDP is the approach we need to go. I believe we need to look at a dashboard, which is what I just showed. Indeed, if any one of us goes to the doctor we do not want the doctor to give us one number of how we are doing. I want the doctor to tell me about my blood pressure, my diabetes level, my body mass ratio and my cardiovascular system because my body and all our bodies are made up of many interdependent delicately-balanced living systems and in that lies health. It is the same systems that make planetary health. Therefore we need that disaggregated information.

Simon Kuznets in the 1930s was asked by the US Congress to come up with one number. He did and that is what we now call GDP. I will bet my life that if he were sitting here in the 21st century, with the array of data that we now have to understand the living world and human life in its own terms, he would be the first to say, "What are you still doing using my one number? That was a desperate time in a war economy of the mid-20th century. You are in utterly different times." We know utterly different things about the breakdown of the living world, let us recognise it.

The IPCC has just realised its latest report on the impacts of climate change. It is catastrophic and devastating. He did not know that. The early policymakers did not know that. We do. How do we respond? We respond by recognising the delicate balance of our planetary home. We need metrics that do justice to recognising the connectivity. That is why I believe we need a dashboard.

It is also to recognise that when GDP goes up, whose GDP is it? Is it going up for the worst off in society? It is not. Very often we celebrate the rise of GDP but we fail to say that the worst have become no better off, incomes have been stagnant for decades. Therefore we need metrics that disaggregate and do justice to the detail that we care about when we talk about the success of our society.

I say let GDP be useful. Let it be a measure of the flow of monetised activity in an economy. There we are, that is what it tells us. However, we want to know so much more and we can know so much more. Therefore let us draw on the richness of data that is now available, and that is improving every day, to tell ourselves about what thriving means in the 21st century because it is something very different from more spend in the economy.

Q64 **Chair:** You acknowledge it has a role to play in assessing the financial performance of an economy?

Professor Raworth: I acknowledge it tells you how much money is being spent buying stuff. What are people buying? Are they buying weapons? Are they cleaning up an oil spill? Are we buying more space and doctors in the NHS? It matters hugely. The overriding number, to me, does not tell us anything like what we actually want to know. It might be useful in national accounting to know the through-flow. It might tell you something about tax revenues. However, it does not tell you anything close to what we want to know when we come to talk about welfare, ecological integrity and social justice.

Q65 **Chair:** Surely telling us something about tax revenues allows policymakers to decide how they are going to spend those tax revenues. We are not members of the Government but as government we can only spend the revenues we are generating or borrowing. Those spending choices come out of a rising economy as measured by GDP, don't they?

Professor Raworth: I would argue that as a country with our own sovereign currency we regularly create money when we need money, which is what quantitative easing is. The Government always is creating money when that money is needed and removes money from the system through taxation. It is still taught in economics courses that money available to the Government is what is raised through taxes. I argue that is not the case at all. When we have control over our own currency—which is one of the reasons I think the UK did not go into the Eurozone back in the 1990s, to retain control over our own currency—it means we can spend money. We can pay for the things we value if we have the capacity to do it.

We have a huge possibility here. As a nation with a sovereign currency, we are not limited by tax receipts. Therefore GDP does not tell us that limitation in the way it might for some other countries.

Chair: Matthew, do you want to come back on that?

Matthew Lesh: There are a few points I would like to come back on. I was going to originally make the point you just made, about how our ability to invest in things that are going to grow our economy or even to tackle environmental issues is very much dependent on the size of our economy. Our resilience to, let's say, climate events is very much determined by overall GDP, the classic example here being the extent to which the Netherlands can function extremely well despite the fact that around a third of the country is below sea level because they have a high GDP. Countries with lower GDPs are going to inevitably struggle a lot more in facing environmental issues.

I will have to very much respectfully disagree with the notion that we can just print money and the printer goes 'vroom' without any negative consequences. The very high levels of inflation we are seeing right now are a direct consequence of the monetary world-view that suggests our resources are unlimited and we can keep on creating currency. We can keep on doing that, of course, but the productive capacity of the economy will eventually be met and once the productive capacity of the economy is met we will have inflation. Therefore if you want to grow the economy you cannot just print money, I say policymakers need to make various reforms in order to grow the supply side but that is probably a separate discussion.

I also want to respond to the point about the environment and whether we are managing to reduce emissions. The evidence is quite clear that the UK economy has been growing over the last couple of decades with a relatively flat line or slightly reducing level of carbon emissions. Therefore we are managing to decouple growth from carbon emissions to some extent, maybe not fast enough, as well as decouple economic growth from resource use. That is a definitional thing in some respects, which is the way you achieve economic growth in the modern context is using resources more efficiently and being more productive or through digital means that are very low in terms of their material use. That kind of decoupling is absolutely essential to the discussion and shows that GDP does not necessarily have to come at the cost of the environment.

Q66 **Chair:** We are going to come on to that in a second. I would like to bring in Henrietta.

You have written on the subject of how we define prosperity. I have written on the subject of prosperity and wrote a report for the Government on growing the contribution of defence to UK prosperity. I was prompted to do that because the Treasury recognised no multiplier effect for a pound spent on defence, which seemed to me to be somewhat short sighted. I do not want to get into a defence debate here.

Could you give us the benefit of your views on whether GDP is a good measure of prosperity?

Professor Moore: I do not think that GDP is a good proxy for prosperity, no. It is a 20th-century metric and is not fit for the 21st century. We are now in a completely different situation. We need to substantially regenerate the planet in many ways and we need to improve the quality of people's lives. Exactly as Kate said, it is a good measure of activity within the economy but it does not tell us anything about distribution or sustainability. What are the two big challenges of a 21st century government at the moment? Inequality and environmental degradation, neither of which are captured by this particular metric.

One of the things we have to ask is not whether GDP is good or bad as it stands but whether it is fit for purpose now for the things we need to do. In other words, have we been pouring lots of money into regional inequality in the United Kingdom without seeing the returns to that investment? The answer to that is yes, because we do not really understand what is going on in our regions.

Regional inequality is one thing but there are very, very large inequalities within regions. We did an analysis last year of eight regions of the UK and looked at the best-performing small area within them and the worst-performing small area. In all those situations what we discovered is that the worst-performing small areas are a good deal more toxic than the best-performing areas. In other words, there is a very, very close relationship between poor performance on lots and lots of metrics and environmental degradation, as you would expect.

When we are looking at those kinds of things, we are asking ourselves, "If we are pouring money into a leaky bucket without understanding exactly where the big holes are and why things go the way they do, this is not a good use of taxpayers' funds." What we have done is to say, "Let us develop a new understanding of prosperity and where it starts". It starts, first of all, by asking the people who are most affected by this, which is the citizens of the United Kingdom, to talk about what matters to them for prosperity in their areas and then to talk to all the other stakeholders in their areas about what matters for prosperity. Normally when we do this the first criticism that is made is that government cannot deal with all this information. We do not really want to know what all these people think about this, it is too much and it is in the way, and what we really need are four or five things that will give us an idea.

We took that on board seriously. What we did is say, "Let us put together this very detailed information with the big structural drivers and constraints, deindustrialisation and so on, what is going on in the macro economy". The first thing you discover when you do that is that the way we think about economics is we think about the micro and the macro, and the macro is meant to be an aggregate of the micro. One of the problems here is that when you start looking at redefining prosperity that does not hold because what really matters is the space in the middle. It is the space in the place where people are living their lives, where the very specific nature of, say, climate change, or deindustrialisation, or a lack of belonging, or a lack of education, or whatever it, is takes a specific form because of the particularities of those places. We all understand this, we know that Yorkshire is not Cornwall. I will stop there.

Q67 **Chair:** Thank you. Can I ask one question before I move us on? What is the unit that you are measuring your areas in? One of the challenges I have—representing a rural area that is regarded as a leafy shire county and therefore, by definition, rich—is that we have pockets of deprivation within that that are probably close to the pockets of deprivation in some of the most deprived other larger areas. You mentioned Yorkshire and Cornwall. We have both a Yorkshire and a Cornish representative here and they might want to come back to you on that. I am sure they will agree with me that there is significant deprivation within each of their communities but they are broadly regarded as more prosperous than some others.

Professor Moore: That is exactly why I started the work I am doing, because of having to account for those pockets of deprivation and our inability to make any change in their circumstance. Basically, technically speaking, you are probably looking at a super output area, a small area. You need to understand specifically what has been going on in those places and why things are not shifting.

Q68 **Chair:** It seems to me that government tends to allocate funds based on a per capita basis and there is a significant skewing towards density because there is a presumption across government, which has been in existence for several decades, that density equals deprivation. Is that something you recognise?

Professor Moore: It does in certain circumstances and not in others. It depends on what is going on. Yes, of course, we are all familiar with the idea that density in inner-city areas equals certain kinds of challenges and problems. What I am saying is that what we have been doing is going into certain places—we have done, for example, five very different boroughs in London—to look at the actual circumstances in those boroughs and the history and circumstance of what has happened to them and why they are as they are, and then put that together with all the Office for National Statistics data so you can see the major drivers. In other words, to create this very, very detailed place-based understanding of what will be the mechanisms you will need to move to get things to change in a specific place.

Q69 **Sir Robert Goodwill:** I represent a Yorkshire constituency. Often I am telephoned by the media saying, "It's terrible, people are on very low incomes". The fact is that in Scarborough itself you can buy a perfectly decent flat for £100,000 so two people earning £25,000 each can easily get a mortgage whereas in London, where we are told everybody's rich, nobody can get on the property ladder. It is looking at property prices and the other costs of living. For example, transportation to work. People can walk to work in Scarborough because they can afford to live where their office is whereas in London they have to spend £5,000 on a season ticket. Can that be factored in, in terms of the way we look at wealth?

Professor Moore: Yes, it can because it is really about what we do with the wealth group we create, no matter what the absolute levels of wealth are. If you look at the United Kingdom as a whole, if you took the Legatum Prosperity Index, for example, which is a very specific thing, then they would tell you that the Highlands and Islands are the happiest places in the United Kingdom and Chelsea is pretty miserable. I do not how many of you are residents of Chelsea so do not please come back if you are. That is because of the things you are mentioning, such as walking to work. Walking to work is quality of life. However, walking to work if you have to walk to work because there is no transport and you have to start running to work early in the morning is not good quality of life. It is diversity and context.

Q70 **Caroline Lucas:** I want to come back to Kate and ask whether you think policymakers are trying to have their cake and eat it when they argue that it will be possible to tackle the climate and nature crisis and to continue growing economic growth at the same time.

Professor Raworth: I do and I worry there is widespread adoption of the concept of green growth. That sounds great and it would be wonderful if that were possible but the concept is running far ahead of the evidence. There are many empirical studies by academic scholars worldwide that are showing we are not seeing anything like the speed or scale of what is called decoupling of carbon emissions and also our material footprints worldwide.

I want to come back to the data that was cited earlier on the UK. BEIS and others have often said that in the UK, over roughly the last 20 years, we have seen GDP grow by about 75% and carbon emissions fall by about 44%. That sounds wonderful. That sounds, "Job done. We have got green growth, haven't we?" That is too quick. First of all, it is not only about carbon. I will not pick this up again but there are multiple planetary boundaries we are overshooting on; not only on climate change but on resource use, land use and water use. Think of all the food, clothing and electronic devices we are using. None is made in this country; they are all imported. The data that is often cited is only for emissions and resource use from this country. When we take account of our global material footprint and our global carbon footprint that reduction dramatically reduces. If we look at it year on year it is around 1% and a bit.

That, to me, is the point. Yes, there is some reduction in our carbon emissions and our material use. However, it is not falling at anything like the speed or scale that these times demand, which this decade of ecological and climate emergency demands and that the IPCC tells us that our country—as one of the richest countries in the world and also with historical responsibility—should be moving. Therefore we need to take much more drastic measures and seriously implement the policies we have already introduced. The Climate Change Committee says this Government is not yet at all on track for the majority of the climate targets it set for itself. That means we need far more ambitious policies. We need to act, to regulate, reduce and ban internal combustion cars. The city of Amsterdam is going to have no internal combustion engine cars from the year 2030—it is moving faster. We need to take so many more measures.

If we are serious about these measures that require us to come back within planetary boundaries—this is the point, if we act and put in place those measures—they may well hamper the GDP growth we have come to assume is normal, the 2% and 3% that we aspire to. That is where the rubber hits the road on this issue. Are we going to be serious about the ecological targets and the social targets that we hold for ourselves or are we never going to quite implement them because we are too wedded to GDP growth?

Therefore sitting beneath this question of whether we look at a different metric is a much bigger question of whether we can reduce our dependency on unending GDP growth. I hope we will come to discuss that later because it is the real question that sits under why, when everybody in the room agrees that GDP does not serve everything we care about, we keep coming back to it year after year. That is because there is a structural dependency on growth that needs to be released if we are going to enable people to thrive on this delicately-balanced living planet, the only known one in the universe. I know that sounds dramatic to say, but it is the only known one in the universe. All the scientists are telling us we are rapidly in the process of destroying the life-support systems of our planetary home. The UK is one of the most nature-depleted countries in the world. If getting higher GDP was evidence that our environments will improve, we would not be one of the most nature-depleted nations in the world.

Let me move to speak of the River Wye. I know this Committee has come out with a report talking about the state of the UK's rivers. There is a lot of investment in chicken farms there. That is boosting GDP, nice. However, they are producing massive excess nitrogen and phosphorous that is running off into the river, killing that river and killing our waterways. We are destroying UK nature. I appreciate and agree with the recommendation from this Committee, which is that what we should do there is set a capacity. What is the capacity of that river catchment area to safely absorb that runoff? That should be the capacity of farms that are then allowed to be built there. Then let us see what farms can be most effective and innovative in reducing that. That principle of recognising the capacity of the living world to absorb our activities should be not only at the level of the catchment of the River Wye but at the level of the UK and the level of the world. We need it not just in carbon emissions but in our respect for biodiversity, for water use and all of our material use. We need to put those targets at the heart of our policymaking. That means we need to release ourselves from this dependency on unending growth.

Q71 **Caroline Lucas:** Thank you. Indeed, I think we are coming on to the issue of the underlying dependencies on growth later in the questioning.

I will come to Matthew and put it to you that what you have just heard from Kate Raworth completely undermines the case, I argue, in some of the papers you submitted in your evidence basically still clinging onto the idea of the environmental Kuznets curve. Can you say that you think that the environmental Kuznets curve is a relevant measure of anything very useful right now? That is given we have heard that, for example, quite a lot of the boundaries we are concerned about are around river quality, natural footprint or some of those biodiversity issues—the nine constraints, for example—or the fact, indeed, that it can look as if we are doing terribly well when our GDP gets higher but that is because we have exported half of our dirty industries to poorer countries and then the pollution ends up on their balance sheet and not on ours.

Matthew Lesh: When I take that first point, briefly about exporting emissions, it is true that in terms of production emissions there has been a bigger decline than in consumption emissions. However in terms of per capita consumption emissions from government data, it does appear as if there has been some decoupling there.

Q72 **Caroline Lucas:** Enough decoupling?

Matthew Lesh: I am not an IPCC expert to tell you whether or not, with—

Q73 **Caroline Lucas:** You should know that. If you are coming to this Committee telling us that growth is essential, both for social justice and also I think you are saying in terms of reducing our environmental damage, then surely you would need to know whether or not that decoupling was sufficient. Is it happening fast enough and is it happening comprehensively enough in order to be able to get us to a safe space?

Matthew Lesh: I did discuss later in my evidence that I think the clear way to solve this issue is through a price on carbon. That will ensure the decoupling much faster and much more efficiently than—

Q74 **Caroline Lucas:** What about the things that are not carbon though, we have just talked about river quality or what about some of those species lost?

Matthew Lesh: To the extent to which you can, you can use price-based mechanisms for other types of pollution and air quality. That is something that has been talked about for many decades. To the extent to which you want to achieve other goals, obviously you need different solutions.

I want to quickly respond to that point about the environmental Kuznets curve that I think still has some validity.

Caroline Lucas: Can I just stop you one second? Can you talk a little bit slower? I know I speak fast but I am struggling to keep up.

Matthew Lesh: I very much apologise. Back to that point about the environmental Kuznets curve, I think there is evidence to show that as countries perform better on GDP measures initially there is a worsening of the environmental impact. That is very much the UK experience during the industrial revolution, for example. There was a lot less concern about environmental issues. The Thames was severely polluted, for example, to the extent that it famously stunk out Parliament. Over time attitudes changed, for example your position in Parliament reflects that. There is a lot more environmental concern over time as people become more prosperous. There is also the ability to use those resources for environmental purposes. For example, in tackling climate change—I know it is not your only focus but it is a major one—a bigger economy means greater resources to invest in carbon-reducing technologies like solar panels.

Q75 **Caroline Lucas:** If your industrial processes, which are leading to your GDP growth, are themselves damaging the environment at a rate of cost that is greater than the money you are generating through the GDP you are raising then you are on a hiding to nothing, aren’t you?

Matthew Lesh: Potentially. I am not necessarily persuaded that economic growth has to come at environmental cost. Obviously it does sometimes.

Q76 **Caroline Lucas:** Where is the example then of absolute decoupling; anywhere in the world where you have had absolute decoupling at the scale that is necessary to keep us below 1.5, let us say, if we are talking about carbon?

Matthew Lesh: I do not think we have had that because I think the policy setting is wrong because we have not priced carbon. There is a policy problem here in terms of whether we will price carbon. Then there is another bunch of issues about the negative impact on low-income households and about the negative impact on existing industries. It is not easy, by any means, to price carbon, but you can solve that issue with pricing carbon and you would still achieve economic growth. Countries that have priced carbon and localities that have priced carbon have still managed to increase economic growth. There are some good studies to suggest that pricing carbon has not had a negative impact whatsoever.

Q77 **Caroline Lucas:** Kate gave the example of the River Wye. What pricing mechanism will you use to get the pollutants out of the River Wye?

Matthew Lesh: In classic economic terms, you would probably look to assign some kind of property rights. I am not so familiar with that example, so please excuse my ignorance, but you would probably look at some kind of property rights or price-based solution where you effectively ensure that the extent to which you might need to put things into the river is limited. Let us say you set a maximum level of deposits that you could put into the river. You are right. You do need a regulatory intervention to stop the pollution. You could, like we do with fishing stocks, allow trading of those permissions about what needs to be deposited into the river. I do not know exactly what that would be in that specific case, but there are market-based solutions you could use to address that by setting the maximum of whatever the pollution issue in this case.

Q78 **Caroline Lucas:** Let me come to Professor Moore. Are we framing this in the right way?

Professor Moore: Perhaps not, no.

Q79 **Caroline Lucas:** Should we look at decoupling our current model of growth from environmental harm? Given your work compiling the citizen-led prosperity indices that you were referring to earlier, how would you approach this? Where would you approach this?

Professor Moore: We need to recouple social and economic prosperity in a new way and embed it in environmental prosperity. Let us not discuss decoupling for a moment. Let us discuss recoupling the things that matter that will drive future liveability.

Right now we are worried about quality of life and the future liveability and future sustainability of the planet. As we are having this technical argument about whether markets will bring us where we want them to go, we know that they will not do it alone. No, never. A market is just a mechanism for a set of exchanges, exactly as it says. The best things that we managed to do in the United Kingdom in the last while have been in circumstances where we have been shaping markets dramatically.

The good example of that is renewable energy. The costs of renewable energy have gone down, for photovoltaics by something like 80% in the last 10 years. This was not achieved by the market by itself. It was achieved by shaping the market around renewable energy by certainly encouraging various kinds of innovation, but also primarily by rethinking energy distribution for ordinary communities, allowing communities to do things with their energy, taking control of their energy. Some of the best examples around the UK are where people have taken control of producing and distributing their own energy, made a bit of money by selling it back to the grid—so there is a market role here—and then decided to use it for, what, giving extra lessons to their children in the evenings so that they have improved skills and making investments in social housing.

The UK is replete with these good examples of people making those kinds of changes. Again, we can argue about whether they are the best examples but, on the climate initiatives, Cornwall brings together a large number of partners on the climate initiative and that means that people are sharing knowledge and they are doing things at the local level. Essex does the same thing. Essex has announced that it will come to net zero by 2035 and it will do a particular area of Essex first. We are starting to work with Essex now on a whole system change for local areas in the United Kingdom, which means that you have to take seriously the intersections that Kate has been talking about. You are looking at air, water, transport, soil, carbon, the whole lot together.

When you do that, you create new kinds of jobs, new kinds of markets, new kinds of products, new kinds of value. There you are not necessarily talking about whether we want to have a decoupling. You are talking about a system change that is taking you in the right direction and, as a result, is also creating new forms of employment, new ways of managing local areas, even products and things that we cannot even begin to think of. I do not even know what they are. When I was a child, there was nobody called a “web designer”. The job did not exist. Very likely, the future will look like that in this area, too.

We have enormous opportunities in the UK but, if we keep on with this GDP and these arguments about which proves this and which proves that, we will embed in our own economic thinking, and the way we align our economic thinking with our goals, a particular kind of path dependency that is set by GDP, which means that we will miss most of these new opportunities. We will not even be able to grasp them. That is much more worrying than some of the other things.

Professor Raworth: I wanted to pick up because Henrietta started talking about places within the UK and I wanted to add the doughnut diagram that I drew and published in "Doughnut Economics". Since it came out in 2017, the number of places, cities, towns, neighbourhoods and county councils around the world that have connected with us and have said, "We want to use this locally", has amazed me. We founded the Doughnut Economics Action Lab to work with them.

Cornwall County Council has created its own adapted version of the doughnut with the social on the inside and the ecological on the outside. They use it as a decision-making wheel for every planning policy that comes through. They are taking a new metric and putting it into policymaking, which is the key. We can all have any metrics we like on paper or on a website. It is about how they shape policymaking.

Glasgow City Council is currently creating a doughnut city portrait to ask, "How is our city doing? Are people here thriving? What is our impact on people in the rest of the world?" Leeds is using it to transform the city over the next 10 years and also Amsterdam, Barcelona, Copenhagen and Nanaimo in Canada.

By the way, we do not go and knock on anybody's door. This is all places coming to us and saying, "We want to go beyond GDP because, as a city, as a county, as a region, we know that that is not the measure of our wellbeing. We want to take into account a diverse dashboard of metrics." They are adapting it in each place to their own needs, their own realities, their own contexts and their own interests. We are not trying to make something that is comparable across places. There is a role for that, but it is about something that works here, which is what New Zealand has done with its living standards framework. Let us make something that works here.

The UK has an amazing opportunity to also lead on that and say, "Let us make a new vision." What is our vision of the thriving nation that we want to be, both socially and ecologically? The social and natural metrics are now available to measure that in life on its own terms. We do not have to turn everything into a monetary value. We flatten so much information when we try to turn it into monetary value. There is a real opportunity for leadership here, but I wanted to share that it is bubbling up from councils in Ryedale and in York and Humber. It is bubbling up from places where they are saying, "We will start to do this anyway because it serves us."

Chair: Thank you, Kate. You have given us clear examples of that. We have to move on a bit. Barry has a quick question before I bring in Matthew Offord.

Q80 **Barry Gardiner:** I welcome all that has been said about focusing on wealth and wellbeing rather than on monetised economic activity.

Mr Lesh, I wanted to pick up on some of the evidence that you have given us, though, where you argued that economic GDP growth led to a cleaner environment. You said, "Environmental progress is most striking in more affluent, developed countries, which have reduced air pollution, cleaned previously putrid rivers like the Thames, and opened green spaces for public enjoyment."

Is that a fallacy of the baseline? They have become polluted rivers and polluted air because of that economic growth. If you take a baseline that is in the worst possible conditions and say, "Look, when we became really rich we got rid of some of that", it is just a fallacy of the baseline. Even then, we are talking about a geographic fallacy because we have now exported many of the pollutants abroad. That is happening. We are exporting our emissions now. It seems to me that what you have submitted in your evidence is entirely fallacious.

Matthew Lesh: I would respectfully disagree about the quality of—

Barry Gardiner: Sorry. I should say the Chair requested your answer to be brief.

Chair: I should have asked you to make a short question rather than a statement. Can we have a quick response to that, Matthew?

Matthew Lesh: I will briefly respond by saying that you could look back at an alternative world of course where Britain never industrialised and where the world was significantly poorer than today. That would not be a better alternative. Some environmental degradation is probably inevitable in human history and human development. We cannot go back, even if we wanted to, to achieve the kind of economic progress we have achieved without any impact on the environment purely from a resource exploration perspective. The question is then whether we can, as we build more resources, treat the environment better? The answer is yes.

Q81 **Dr Offord:** Professor Moore, using the matrix of GDP, it is possible that we have skewed economic development across the country in different ways as different areas of the United Kingdom have different GDP levels. To what extent do you think that shifting away from how we measure our prosperity will help the UK to level up?

Professor Moore: The first thing that will help is that we need to be much more solution focused than we are. We need a series of plans for how we plan to improve prosperity in terms of quality of life and liveability for each part of the United Kingdom. I see no evidence that we have such plans. When you look at the plan for these things, you see that people say they will become carbon net zero by a certain date, GVA will improve and there will be a lot of investment by high-end industry that will bring in great new jobs and new skills. Usually when you look at these things in detail and look at what has happened historically, you find that indeed we do get innovative industry that goes into some places. It has nowadays very few jobs in it. Its actual impact on any of the things that we care about in any of these areas is small.

We need to be thinking quite differently about the pathways to prosperity. That means thinking about how to take a whole-systems approach at each local level and start to move the particular intersections between what is going on with all of these systems—economic, social and living—so that you push those areas into situations of a better quality of life. We have been doing it. We are doing it for these five boroughs but we are also now doing it, as Kate has been saying, for Leeds, for Liverpool, for Glasgow and for other parts of the United Kingdom, working with local communities that are already taking some of these actions to work out what has to be done as opposed to just saying, "If GVA goes up, everything will be fine."

Q82 **Dr Offord:** Do we have to share the characteristics across the country? GDP is currently the only financial one.

For example, my PhD was on economic development and social exclusion in Cornwall and the whole issue of what the economy in Cornwall is. We can all agree that the economy is the financial output of the county, which is low compared to other parts of the country. The discussion has continued and still continues to this day about what parts of the economy are productive. The part that, in my opinion, is productive is tourism, which is low paid, but there remains a fanciful view among some that agriculture is the "driver of the economy". I have heard that expression so many times.

What does the economy of Cornwall share with the economy of the London Borough of Barnet, for example? The one area that it does share is GDP output.

Professor Moore: Looking at Cornwall and looking at, say, Barking and Dagenham or any other London borough together and saying, "GDP is equivalent in one and equivalent in the other", tells you absolutely nothing about whether there is quality of life or liveability or any other thing. In fact, it takes you off completely in the wrong direction. I do not know if you had intended in your discussion this afternoon that we might talk about some alternative metrics for GDP and also some ideas about how the British public might be involved in this discussion about the realignment of the economy, then we could get on to some of those things. Things could be done immediately on that front.

Chair: We will come on to that.

Q83 **Dr Offord:** Okay. If we are to come on to that, I will leave it there. Thank you, Chair.

Mr Lesh, what challenges do you see in incorporating qualitative measures of social capital or wellbeing into our system of national accounts?

Matthew Lesh: I mean, in the first instance, you will have methodological issues. I suspect those are in some way possible to overcome.

I am a little bit sceptical of aggregate measures in the sense of the human development index, for example. It does not tell you much in respect of what needs to be proved or what needs to be fixed. I am more of a fan of disaggregated measures. It opens the idea of dashboards. More information can be useful. You just have to make sure that it actually tells you something.

The broader issue, though, is that there is not necessarily a consensus about what people want to maximise in their lives. This is, in a sense, an argument against any kind of economic measurement or any measurement of anything that you are trying to maximise as policymakers because people have such divergent priorities for what they want. One person's priority might be the best possible film content online, "That is the only thing I care about. I love film. That is it. It is the only thing that matters to me." But somebody else might have a different view. They might say, "Film is terrible. I want better TV." The idea of what people want and what people need is individualised. It is not even community-based but individual. That is why trying to maximise a particular measure, whatever that measure may be, can be flawed.

Q84 **Dr Offord:** Okay. Again, I accept that point, but you started off by saying that this could all be established through a methodological approach. Fine. What should be our methodological approach?

Matthew Lesh: I do not have a particularly strong view in terms of the methodological approach. I am not a statistician. It is probably a little bit outside of my field of knowledge. You cannot use just one measure. You would have to use lots of different measures as localised as possible to have any particular meaning and figure out, as some of the other panellists discussed, the priority in terms of what you want to improve and then focus on that. An aggregate measure or one single measure will not tell you much.

Q85 **Dr Offord:** What would Adam Smith want?

Matthew Lesh: Adam Smith would not have had much conceptualisation of the idea of economic measures. He would not have had any idea that you could gather this kind of information. I will not speak for Adam Smith. Plenty have tried over the years. It is quite a futile goal. I am not sure he would have had any particular interest in it. He would have been more interested in the general sense of prosperity that can be maximised across society, however people choose to view that in their own individual way.

Q86 **Dr Offord:** Okay, thank you. I did not ask you to speak for him but perhaps interpret what you thought he might have said. Anyway, Kate, as we started this session I was pleased that your book was brought to me when I was involved in the contributions to a conference I attended for the environmental sustainability initiative at the University of Exeter at Falmouth. I am aware of your work and the enthusiasm that some people had for your ideas as well. In your submission, you discuss various growth dependencies that are built into our conventional system of government and finance. Do you see any ways that policymakers could begin to reduce those dependencies?

Professor Raworth: This is a key question. We have inherited economic systems, largely fuelled by low-cost fossil fuels, which means that we have grown up with generations of memories of economies that just grow. Kennedy was elected on a promise of 5% growth. That was the goal. Then around the turn of the century, 3.5% was the norm for OECD countries. Now it is 2%. It is falling.

We have to get with the idea that the presumption of endless economic growth has been a passing phase in history. It is declining. The OECD and the IMF have looked across high-income countries and said that the rate of growth is declining. If we were to take seriously the ecological challenges we have, we would act much more in ways, I believe, that would increasingly flatten it. We need to recognise how we are structurally dependent upon assuming that our economies will grow endlessly.

Q87 **Dr Offord:** Do you believe that some parts of the economy should either stagnate or even decline and other parts of the country or other parts of the world should be able to advance, based not just upon financial metrics but perhaps upon biodiversity metrics and others, so that they can either regain or continue to advance and someone somewhere has to lose out?

Professor Raworth: I believe that ecologically we need to regenerate this planet and we need to regenerate this nation, which is recognised as one of the most nature-depleted in the world. In terms of economic activity, absolutely, we need to let go of some things and leave them behind in the 20th century, "Fossil fuels, thank you. You were useful. We now know too much. We need to let you go." Other things need to grow in their place: renewable, insulation, rewilding, ecological agriculture and a circular economy. By the way, these create jobs. Instead of using more new resources, which is what we have always done in the past, we employ people to use the resources we have far more effectively, slowly, creatively and carefully. It is a win-win for job creation and resource reduction. That is the economy we need to move towards.

However, we need to recognise that this may generate a lower GDP growth than we have structurally become dependent upon. One example is around employment. In the past, companies have focused on chasing labour productivity. They wanted to employ fewer people to make the same amount of stuff or the same amount of people to make more stuff. If the economy is not growing, that will quickly turn into an unemployment line, which of course is a huge concern for governments.

What can we do? First, we can switch from incentivising labour productivity through taxing labour—it is almost an absurdity that we still tax companies for hiring people—to taxing companies for using new resources. That stimulates a circular economy and it means companies employ more people to use those resources.

Also, a lot of research and experiments are going on to see if we can move people towards a four-day working week. They would be paid more for a four-day week. Often people are more productive like that. We are removing the need to endlessly grow to employ people. That is one of the lock-ins.

Another one is that some people receive their income through wages and some people receive their income through rents, whether land, housing or dividends. If the economy is not employing more people through wages, you will get a rapid increase in inequality, which we would have seen at the beginning of Covid if we had not had a furlough scheme. Rentiers continued to charge rent while people who earned wages did not have any. You will see a huge inequality open up. Growth has long been recognised as a way of avoiding the pain of inequality that sits under a lot of our economic structures. Those are just two examples.

This question of how we are dependent on endless growth and therefore what kind of policies we could begin to put in place is a massively under-researched topic, whether in universities or in policy departments, and it is critical. I am involved in conversations around exactly this in the European Commission. It is interesting that the European Commission is starting to say, "We are not asking whether or not we can have endless growth. We know we need to move beyond it. How can we move beyond it?" These are real questions and policymakers need a lot of institutional, educational, academic and think tank support because we have neglected it through our assumption that growth can be endless. It is becoming clear that it cannot.

Chair: Thank you, Matthew. I am conscious that we are almost out of our allotted time for this panel. We have two more sets of questions. I encourage colleagues to keep them quite concise and answers, if we could, quite concise.

Q88 **Jerome Mayhew:** You have put me in a difficult position. Okay, fine. I had an additional question I wanted to put, but I will skip all that.

Professor Moore, you are part of the Dasgupta review, for which I am grateful. It was an interesting report. What actions would you like to see the Government or the ONS prioritise in response to the review and are any specific opportunities coming up where we can take advantage of this and where the Government can put beyond-GDP thinking into action?

Professor Moore: Yes. At the moment, the Government have announced a number of initiatives around the Dasgupta review, but a kind of framework to bring all these things together is lacking. That is the real problem. We need the new framework before we start taking all this action.

We do have the Office of National Statistics, which is doing a fantastic job, bringing that full capital into the national accounts and so on. There is a big opportunity for us with what the UN is trying to do with the green pathway and the new UNDP initiative there. The United Kingdom could show, as Kate was saying, some considerable leadership here and should do because we have the capacity because the ONS is so well advanced in its abilities. One big opportunity is to play a big role there.

At the local level, it is important to understand that Partha and I disagreed quite a lot during the review over the notion of inclusive wealth because inclusive wealth just means including natural capital in the way that wealth is created. It does not actually mean including what is happening in terms of people, regions, redistribution and so on.

Q89 **Jerome Mayhew:** That is funny. That was my follow-up. Based on the Dasgupta report, it feels like we are having a bit of a false argument here. Our think tanks are all, "Should we have GDP? Should we not have GDP?" But if you look at inclusive wealth, it is produced, human and natural, and GDP has a role to play in that.

Are we really discussing GDP being an important set of figures but not the only one and, instead of having one overriding metric, we have matrices of metrics that we can adjust for importance as we go along? The ONS is already doing that.

Professor Moore: We need to think about these additional metrics and the public conversation around this. I do not know if this is the right moment to bring these things in.

Jerome Mayhew: Please do.

Professor Moore: At the moment, we are not able to align some of the outcomes we want because of the fixation with GDP. It does not mean we necessarily need to get rid of GDP altogether, as Kate said. If you want to have some measure of activity within the economy, then this is fine. But we do have to realise that the way that we are running the economy is seriously depleted by the GDP focus. As you will know because you have been doing this work on water, only 14% of our rivers meet the regulatory requirement. When are we waiting to get over the top part of the Kuznets curve? When is it happening? It is a long way off.

Q90 **Jerome Mayhew:** Listening to the Chair, I will cut you short on that. We have heard evidence of the doughnut. The outer side, which we have talked about quite a lot, is what the planet can sustain, but we have to pay for the inner side of the doughnut as well. I am using GDP as a loose reference to money generation, the kind of money that governments and individuals can use to pay for the good stuff that we all want. If we say we are moving beyond GDP, how do we pay for it?

Professor Moore: We pay for it by realigning the economy. We have published a paper on fiscal reform for the UK, which shows that we could pay for carbon net zero but that the biggest cost for it will not be in the areas we are talking about currently in the conversation we have had now, but in the kind of work we need to do for new social and political institutions. In the realm of the social and the political, we will pay huge costs in future if we do not move quickly on doing something about the climate and biodiversity.

Q91 **Jerome Mayhew:** Thank you. Mr Lesh, your submission argues that there are flaws in the Dasgupta report's case for adopting inclusive wealth. Develop that for me. What are they?

Matthew Lesh: In the first sense, as an alternative to GDP, it measures something different. A stock is not the same as a flow. That is an intentional change in focus by the review but it means that the notion of inclusive wealth will be useful to give you a sense of the total stock.

I was quite struck by the fact that the ONS, as has been discussed, is already doing some work on this. For example, it has tried to calculate natural capital as worth around £761 billion over 100 years. That was then compared in some of the commentary to GDP, which is about £1.9 trillion in around that time. But that compares a stock to a flow. It compares our year-on-year size of our economy while the total household wealth, let us say, is closer to £10 billion. Natural capital is a component of our broader wealth, of course, but it is not the only component and is not the only thing that will be measured and be important. You can get into a bit of methodological confusion there.

Also—and this is a point made throughout the panel—there is a question: is GDP growth all that policymakers focus on? That has been an assumption of this discussion. I am not necessarily sure it is the case. Over the last two years, policymakers actively chose to shut down large sectors of the economy in the knowledge that GDP growth would be lower to prioritise human life. We have in this country relatively high—and growing—levels of taxes and I could make a strong argument that that will reduce economic growth year on year, but it is because we want to fund public services.

These trade-offs are happening by policymakers. GDP is an important measure and you could say maybe there is too much focus on it, but it is not the only thing that policymakers consider. They try to balance. The definition of public policy is making those trade-offs and trying to balance various pressures over time.

Q92 **Jerome Mayhew:** Professor Raworth, we have heard that it is not just GDP. We heard it there as well. There is a raft of stats that you can look at as an economist. The ONS produces a ton of them. Do you not agree that we are arguing over how many angels can sit on the head of a pin? This is an academic debate but, in reality, the Government look at a whole range of statistics.

Professor Raworth: I would argue we are arguing over how many countries can live in a doughnut rather than angels on a pin. No country in the world is currently meeting the needs of its people within its share of the means of the living planet. No country in the world is yet actually making policy in that direction. As long as we keep on asking the value of things bought and sold in our economy, we are a century away from where we need to be in terms of—

Q93 **Jerome Mayhew:** But you recognised earlier on in your evidence that that is still an important indicator.

Professor Raworth: I want to say I did not say it was an important indicator. What I notice is, yes, it tells you the throughflow of monetarised goods and services sold—

Jerome Mayhew: That is an important factor.

Professor Raworth: It is useful—sorry, I did not mean to interrupt you—but the danger is, because it is left on the table, it always creeps back to centre stage and everything else is left peripheral, like satellite accounts—literally by name. I want to say it is not at all centre stage.

The metrics I have here I wish I could show you because our eyes are incredibly important. The power of a number is I can say one number and it is a stat. If I can show you visuals, we can see so much more information with our eyes. But I will not lift it up because I have been told not to.

Jerome Mayhew: You have your nine sections, anyway.

Professor Raworth: However, so many other metrics can guide us. GDP is not one of those because it is not taking us there.

Can I come in on a point you made about the natural capital and the Dasgupta report quickly? My concern with it is that it tries to add together natural capital, manmade produced capital and human capital. Who knows how? First, you have to monetise those things. How do you put a price on those things and then add them together? So much valuable information that has been collected is lost when that gets squashed together.

Secondly, as the ONS itself says, in attempting to calculate the natural capital, it is at least trying to put a price or a value on as much as we can but, I quote, "The natural world supports all life on earth, and its collapse would precipitate our own, implying infinite value." Our own Office for National Statistics is saying, "This thing that we have been asked to give a price and value to is of infinite value." Without a living world, there is no human activity, no life, no economy. It therefore does not belong as one category alongside all the others. It is the mothership on which we dwell. We cannot just count it alongside other things we value. To me, it does not make sense to try to add these things together.

Q94 **Claudia Webbe:** Maybe I will start with Kate. I want to follow on because you indicated that no country in the world meets, essentially, the sustainable development goals or the planetary goals either. In your submission, you do say that Costa Rica comes pretty close to doing so. Can you tell us what they are doing right compared to the worst performers and where does the UK sit on this agenda?

Professor Raworth: Thank you. In our submission we shared a graphic that takes account of a nation's wellbeing of its people on an internationally comparable level. It is not catching all the relevant data we would want at home but it is comparing how well a country is meeting the needs of its people and how well it is living within the means of the living planet.

It totally throws the received order that we normally think of. The data that Matthew was quoting from the Yale index of environmental performance had Denmark, Switzerland and Luxembourg at the top. Actually, if we take account of the global impact of their carbon emissions and their material footprint, they fall way down because they, like the UK, are significantly overshooting planetary boundaries. We are in big overshoot of our impact on the planet through everything that we are importing. We need to radically come within.

As you say, Costa Rica is one country that is closer than many to meeting the needs of its people almost within the needs of the living planet. This is, to me, real hope that it could be possible because some countries in the world, without even aiming for it, are closer.

What is it about those countries? Some good academic research has found that those countries that are closer have two big things in common. First, they invest in health and education and public transport. They provide the essentials of life. Secondly, they have a much fairer income distribution than other countries, which means that that nation's resources and that nation's GDP is being spent more equitably by all on making their own lives thrive rather than being spent by a few, overshooting planetary boundaries with excessive consumption in their lifestyles.

It comes home to a sound policy of ensuring everyone has the essentials of life and ensuring your country does not become too unequal. This is the basic recipe for a country that can live within the means of the planet and meet the needs of all its people.

Q95 **Claudia Webbe:** For the record, where is the UK?

Professor Raworth: In the UK, given our level of income, we have higher than many income inequalities. The inequality really stands out in our social record. We are overshooting multiple planetary boundaries. We are up there with all high-income countries. All high-income countries are overshooting their impact on the planet and radically need to transform.

No country in the world should say, "We are developed." I have never been to a country that should call itself a developed nation or an advanced country because there is nothing developed or advanced about overshooting planetary boundaries and running down the life support systems of our planet. We are all on a transformative trajectory of change that we have never been on before. That calls for not only new policies but definitely new metrics to guide us.

Q96 **Claudia Webbe:** Thank you. Professor Moore, what alternative measures should governments introduce to prioritise social and ecological wellbeing?

Professor Moore: We recently published something saying that we think that by the next election there should be a prosperity index for every parish in the United Kingdom. In other words, there should be a localised prosperity index and you would need to publish them.

In terms of what we could do, at the moment we have a lot within our grasp but we are not using what we have. We now have GDP coming out quarterly. Why not have a range of other baskets of things coming out quarterly as well? We could have one on water. We could have one on carbon sequestration. We could have one on decent work. We could have one on biodiversity gain. The ONS is close to having all of these. We could also have one, as it happens, on social capital. Social capital figurations by the ONS are good and it is already doing the work on trust. We could have one on health. We could have one on domestic violence, which would make a big difference in this country. We could have one on air. Probably no more than 10 could come out quarterly along with the GDP figures and provide a way of aligning the public with what is going on in all of these areas. They could be published simultaneously both at the national level and at the local level.

If I was allowed to say what I would like, we should have something called "The state of the nation", which should be released at Christmastime and should basically say what we have done in the last year and then produce a few case studies around the things we have done. So much good stuff is going on in the United Kingdom.

We hope that by, say, August this year we will have the first platform go at that and what we think are the major constraints and possibilities for prosperity in lots of different parts of the UK. We can then start building on that and working collaboratively with others to do that.

The UK is full of talented people who understand how to do these complex things well. Put them together with the ONS and give them no more than four months to come up with the 10 that you want. Anyone who says that it is complicated and difficult, do not put them on the committee because the best is the enemy of the good. Ask them. Do it now. By the time you come to sit again in the autumn, it will be in place. Guess what? It can be an experiment. If you do not think it is doing a good job, change it. Run it for a year. Have a "State of the nation" report that would give the state of the nation for every nation in the United Kingdom. That is my suggestion.

Q97 **Claudia Webbe:** Thank you very much. Finally, because I am aware of time, Matthew, you have argued that pricing carbon is a more effective way of tackling climate change than reforming GDP. What are the advantages of a carbon tax?

Matthew Lesh: Reforming GDP is in itself will not change anything in the real world. It is a different way of looking at the world and you could argue it would lead to policy change, but in itself I would much prefer to jump to the policy change, which is taxing carbon.

Broadly speaking, taxing carbon is this classic idea that in an economic transaction there might be a negative externality and that when you go buy a good, the negative externality should be priced. You should pay for the value of it in your good. Strong evidence suggests that taxed carbon or pricing mechanisms—for example, in the UK's electricity market—have led to cost-effective decarbonisation and encourage people and consumers not just to pay the cost but also change their behaviour in respect of innovating their production processes so that they do not have to pay as much of a carbon tax, producing new technologies and new energy technologies in more efficient ways.

There are massive benefits to using a carbon tax-based approach and using the ability of markets that have given us all this economic growth and prosperity and focusing them in on dealing with the environmental costs of that when it comes to climate change.

Chair: Thank you very much, Claudia. That concludes our panel. I would like to thank our witnesses, Matthew Lesh, Henrietta Moore and Kate Raworth, for your contributions today and your written contributions beforehand. They have been helpful. Thank you.

Examination of witnesses

Witnesses: Liz McKeown and Andy King.

Q98 **Chair:** We are joined now by Liz McKeown from the Office for National Statistics and Andy King from the Office for Budget Responsibility. It would be helpful if you could briefly introduce yourselves and the roles that you respectfully have that are relevant to our discussion this afternoon.

Liz McKeown: Thank you very much. I am Director of Public Policy Analysis at the Office for National Statistics. I look after our social and environmental statistics and our public policy analysis.

Andy King: I am one of the three committee members at the Office for Budget Responsibility and I am responsible for fiscal issues.

Q99 **Chair:** Thank you very much. Liz, you heard a challenge laid down by the previous panel to the ONS to introduce alternative measurements to sit alongside GDP. What is your immediate reaction to the potential value of GDP and being able to capture some of these wider concerns?

Liz McKeown: Thank you. When we ask whether GDP is a successful measure, it depends what we are asking it to measure.

As a measure of the productive economy, it has many strengths. Its frequency, its timeliness and its granularity all make it a highly successful statistic to measure the productive economy. It is a statistic that we have invested in in the ONS. For example, we now have monthly GDP, which has been quite significant during the pandemic. We have introduced double deflation into our measurement, which is considered international best practice. For what we want GDP to do—to measure the productive economy—it has many strengths.

The challenge comes when people want to consider it as a measure of wider progress in society. There it has shortfalls because of what it does not measure, what it does not capture about the environment and the natural world, as you have been hearing from previous speakers, and even beyond that what it does not capture, for example, of production in the household. We are thinking of things there like unpaid childcare, for instance. There are things that GDP does not capture. If we are wanting to think about progress in a broad sense, we will want to move beyond GDP.

In response to the challenge from the previous witnesses, there are a number of different ways you can move beyond GDP and different users, we find, want different things from that movement. One overall set of approaches tries to build out from the strengths of GDP and use that national accounts framework and those national accounts mechanisms to think about broader economic welfare measures that capture what is missing in GDP. How can we bring natural capital in? How can we bring human capital in? How can we account for household production? What does that look like? It extends beyond GDP but builds on the basis of it. There is a range of approaches in that space.

Then there is a range of approaches that say there are some things that will not be captured in that sort of framework—how the nation feels, for instance—that will not readily fit into a measure of economic welfare. That takes us down a different road of thinking about the different indicators that we really care about. That takes us to approaches like the national wellbeing approach and the sustainable development goals. More recently in the Office for National Statistics we have introduced an experimental health index, which looks again at bringing together metrics and thinking about these things within an overarching or unifying framework.

Our sense is that users want both of those approaches. There are benefits to extending beyond GDP but within the national account framework, particularly as we think about how this can influence macroeconomic decisions in the future. Those do not always have resonance with the wider public and with other policymakers who want to look at the issue of progress in a more multifaceted way. Those frameworks where we look at lots of different metrics within a framework can be more powerful.

Across the ONS we have been developing on both those sides and I am sure we will get into some of the detail within this session, but I will pause there.

Q100 **Chair:** Thank you. I am sure we will come on to some of the alternative metrics that you are developing.

Can I turn to Andy and ask for his view on this broad issue? We had a bit of a debate at the beginning of the previous panel—I am not sure whether you were in the room for it—about whether GDP is useful for determining the public finances and the fiscal position of governments. What is your view about that?

Andy King: My view would be that GDP is vitally important for the job I do of forecasting the public finances because it adds up all the income in the country, which we tax, and it adds up all the expenditure in the country, which we tax. It also provides what I find to be an incredibly useful analytical framework in that the three measures of GDP all have to add up to the same number, so whenever you think about an issue you have a constraint that if your answer does not add up in GDP terms, it must be wrong or you must have missed something.

I have been part of the GDP debate in a number of roles. I remember in June 2010 the first Coalition budget, which had a section in it that said, "GDP is not a good measure of wellbeing." I remember a number of officials striking out the word "good" several times, trying to make the point that it is not a measure of wellbeing and, if you try to use it as such, you are misusing GDP rather than GDP having a shortcoming.

I am probably the ONS's most avid user of GDP and I am also completely aware of what it does not do and why more measures and more matrices of metrics are necessary.

Q101 **Chair:** You are a self-confessed major user of GDP for fiscal sustainability. Can you point to the metrics that would be relevant for assessing environmental sustainability?

Andy King: Yes. There are lots of parallels. For fiscal sustainability, we typically think in terms of some kind of balance sheet measure, often debt, as a ratio to GDP because GDP is the income with which you will repay the debt and sustainability is a ratio there. Environmental sustainability has some similarities. It is about stabilising the stock of something—emissions in the atmosphere—by controlling the flow, similar to controlling the deficit to keep fiscal issues sustainable.

On the choice of metrics, we have looked at climate change issues through the lens of the public finances, so we have focused on emissions so far because that is where the net zero target sits. We are very much in the early days of thinking through the implications of broader metrics for public finances and fiscal issues.

Q102 **Barry Gardiner:** Mr King, the Office for Budget Responsibility has identified the costs associated with climate change with the transition to net zero as a major source of longer-term fiscal risk. Could you talk us through your conclusions on this?

Andy King: Yes, certainly. We concluded that the costs associated with a successful transition to net zero are significant but not exceptional. The major fiscal risk is failing to deal with climate change, which would be catastrophic.

Because we are at the early stages of looking at how net zero and climate change affect fiscal sustainability, in essence, all climate change policy is a risk to the forecast because the forecast has not been factoring it in well to date.

The conclusions we reached on a successful transition are that the public investment required is probably not that large relative to the flow of public investment in general. The biggest fiscal risk is associated with the biggest emissions-related tax—that is fuel duty—where the rollout of electric vehicles will take away 1.5% of GDP of revenue. Other factors are relatively small.

The much larger fiscal risk is associated with the hothouse world of failing to get on top of the issue.

Q103 **Barry Gardiner:** I know that you are required—that is the OBR is required—by statute to explain the main risks to the sustainability of public finances. It is part of your remit to do that. But it would be helpful if you could explain why the necessary spending on the transition to net zero, which you have said is there to stop an absolutely catastrophic risk, is itself described as a fiscal risk to a balanced budget.

Andy King: The important thing is relative to what. Relative to the baseline assumptions that we had previously been making that did not factor in net zero public investment, these were scenarios. We put it that it is possible that public investment would have to be higher. If public spending is higher and revenues are unchanged, then the fiscal outlook is worse.

We have learned since then via the spending review in October that the Chancellor allocated the net-zero element of public investment from within his overall envelope of about 3% of GDP and so that is not a fiscal risk. That is an allocation decision within a fiscal total.

Relative to not dealing with climate change, this investment has an enormous payoff. It is a huge benefit relative to the world failing to deal with climate change. There is the hugely difficult factor that the UK cannot solve global climate change alone and it is a global issue, but the report that we put this in was looking at catastrophic risks. The catastrophic risk is failing to deal with climate change.

Because the Climate Change Committee provides a great deal of detail on its assumptions for how to get to net zero and because the Bank of England and other central banks around the world have been doing a lot of work on how to stress-test the financial system for transition scenarios, we were able to bring those things together and do quite a detailed scenario of successfully dealing with climate change.

Q104 **Barry Gardiner:** I am interested in this concept of necessary spending because you say this is necessary spending to avoid catastrophic risk but you would not describe other necessary spending—for example, the defence budget, which might be said also to be there to avoid a catastrophic risk—as a fiscal risk. I am trying to feel my way through to why you are characterising what you say is absolutely vital to avoid a catastrophe as a risk. In the public's mind, that says, "That is a problem", whereas we are saying, "No, this is absolutely essential."

Andy King: I would not use a word like "necessary" because Parliament has asked me not to provide advice, but we used the Climate Change Committee's estimates for how much investment is required to achieve net zero. The use of the term "fiscal risk" was specifically not already assumed in the forecast. It is additional spending and it would not matter whether it was the additional spending that those who are allowed views on the merits of things thought was good or bad. If it is more than is currently planned and there is no more revenue, then by definition the fiscal outlook is worsened.

We are not allowed to and we are not trying to make a value statement. We were looking at what the Climate Change Committee had put out. It has its number that it focuses on, the cost by 2050 in a single number, but to do that it puts together numbers across all years over the next 30 years. We were using that to generate a scenario for what might happen if the public sector picked up a certain amount of that investment cost and other things.

Q105 **Barry Gardiner:** So we are absolutely clear on this, what you are calling "fiscal risk" is identifying for the Treasury where there may be a variation in revenue that would have to, all else being equal, be compensated for elsewhere. Is that a fair way of characterising it?

Andy King: Yes, precisely. The largest in pound-billions terms conclusion of the report is that fuel duty revenues fall away quite quickly. We have seen over the past 12 months or maybe a little longer that the popularity of electric vehicles is running far ahead of our forecast. That fiscal risk is very much a live issue today.

Q106 **John McNally:** My questions are on decoupling carbon emissions and forecasting. My first question is to Liz. The ONS has pointed to evidence suggesting that GDP growth is being decoupled from greenhouse gas emissions. We read some evidence and heard some evidence earlier on about that. Is that decoupling taking place at a sufficient pace to put us on a path to net zero by 2050? If you have the evidence to hand, it would be good to hear from you.

Liz McKeown: Thank you very much for the question. It is not the ONS's role to make those forecasts about the speed of decoupling. But we do have the role there to make sure that others—and I am thinking of the Committee for Climate Change—which will write those assessments have the data and the analysis they need. In the case of both emissions and GDP, we are able to provide that.

Emissions are part of the statistics that we have brought together more recently in our climate statistics portal. We have published a prototype. We have endeavoured to bring climate statistic information from a number of different statistical producers together. That information is on hand so that bodies like the CCC can make the assessments they need. We do not make those assessments as the Office for National Statistics ourselves.

Q107 **John McNally:** My interpretation of what you are telling me is that you are not exactly sure if we are on course for the whole decoupling by 2050.

Liz McKeown: I would say it is not the ONS's responsibility to make those assessments, but it is our responsibility to make sure that others have the data they need to make them.

Q108 **John McNally:** I am quite surprised at that. Anyway, Andy, my next question is to you. The OBR analysed the impact of tax changes in the budget recently in 2021 on greenhouse gas emissions. To what extent were tax changes in that budget aligned with the Government's legal requirements to reduce carbon emissions? I am thinking about the air passenger duty and so on. What impact would that have particularly on domestic flights if it was going to rise? Could you tell us a wee bit about that, please?

Andy King: Yes, sure. I can tell you about what we did. I am afraid part of my answer is that that last step as to what those measures meant for emissions is also beyond the remit of the OBR.

Essentially, one of the requirements that Parliament does place on us is to be as transparent as possible. My role is to sign off the Treasury's estimates of what those policy measures will do to the public finances. Part of the work that gets done to estimate those numbers is to look at how the volume of activity will respond to price changes and tax changes.

In our last economic and fiscal outlook for the four policy measures that were most clearly related to emitting activities, we published the assumptions that we made about the volumes of activity. That was to help anyone who wanted to then take the next step to look at the emissions impacts.

I have learned since we published that that the way in which the domestic passenger duty tax cut interacts with the emissions trading system is quite complicated. We had not looked into the next step of analysis at the time we presented it. Because domestic aviation is within the ETS overall envelope, if it leads to more emissions from domestic aviation, it reduces the amount available to other activities within a cap that is set by policymakers.

Q109 **John McNally:** Okay. You are producing these detailed forecasts. They are all heavily evidence-based, as much as they possibly can be, from the evidence that you have that is presented to you from a whole variety of backgrounds and Government organisations.

My real question here probably concerns an awful lot of people. Is any equivalent work done across the Government and public bodies to forecast the impact of policies on the UK's greenhouse gas emissions? I am mindful of the fact that we spoke earlier on about the doughnut and how that would produce evidence that everybody could see, particularly in their own area, and then you would be able to glean that out from every local authority in the country. That is probably the greatest thing that we need to know.

To finish, Chair, on that, the other point that is made is that the communities and people need to be able to see that evidence so they are able to scrutinise and challenge it in their own areas and all the way through. Can you make any comment on that question, please?

Andy King: An independent body in the UK looks at how the country is getting on track for carbon budgets and net zero in the Climate Change Committee. Its reports are incredibly detailed because they are not quite as constrained as us in what they are allowed to say. They can give advice and so forth. They cover the Government's ambition as well as the Government's implementation.

I am conscious that my role within the OBR signing off the estimates of individual policy measures impacts on the public finances. There is not an equivalent of that that I am aware of. The public sector net borrowing effect of the 50 policy measures announced in each Budget has an individual line on what is known internally as the scorecard, which is published in the Budget document. There is not an emissions scorecard in the same way. The forecasts that are produced by the Department for Business and the baseline assumptions produced by the CCC are not quite the same as the OBR's current policy fiscal forecasts. I am not qualified to speak as to the import of that for the journey to net zero and the policymaking process, but I am aware that it is different.

John McNally: Okay. Thank you. You have identified a weakness here that we have probably all suspected, which probably needs to be sorted.

Q110 **Caroline Lucas:** I have a question for Liz. Professor Diane Coyle has said that "it is hard to identify any direct influence" that the publishing of satellite accounts on the environment by various countries has "had on economic policy debates". What evidence is there that the ONS measurement of national wellbeing and development of natural capital accounts has influenced and does influence macroeconomic policy?

Liz McKeown: Yes. Thank you for the question. I will develop this in a couple of ways. One is that those satellite accounts are developing over time and, as they improve and as they become more granular and more timely, they become more useful to policymakers. The collection of the data together allows policymakers to think about the interactions between the environment and the economy in ways that they would not be able to do without that data.

That extends across policymaking, not just macroeconomic policymaking. If I think of the environmental accounts and some examples over the pandemic period, the data we had collected together for the environmental accounts allowed us to address questions such as the links between air pollution, mortality and Covid-19 and allowed us to look at issues such as access to outdoor space during the pandemic, which was important.

In policy terms, they are having an impact, sometimes perhaps indirectly because having the data together takes you through. How influential they are in macroeconomic policy terms comes to that question of how we can in the future go further and incorporate the satellite accounts more fully into the national accounts framework and what difference it would make for us to be able to do that. That would advance us further in our ability to influence macroeconomic policy. That is certainly the direction of travel taken in the ONS, thinking about the frameworks we would need to develop to be able to incorporate these satellite accounts more fully.

There are two approaches to highlight there. I heard the discussion at the end of the last session on the difference between stocks and flows. Both are important.

From a flows perspective, we have already begun an approach—and we have published some papers on it—called the spectrum approach, looking at how we can extend beyond GDP to incorporate natural capital and human capital into that approach on a flows basis. We have published estimates in that line. There is further work to do in that space but it is in the right direction of travel.

Dasgupta complements that but from a stocks perspective. Can we bring productive capital, natural capital and human capital together and look at it from a stocks perspective?

Once we are in a position where we have the data in those frameworks, it will enhance our ability to influence macroeconomic policy, but already the satellite accounts are having an impact on policy.

Q111 **Caroline Lucas:** One way, presumably, of incorporating the natural capital accounting perspective would be, when the ONS releases its GDP figures quarterly, to add into that the environmental impact of that economic activity. Right now, we do not know that. It looks as if this economic activity has been produced in a way that has not cost anything when it comes to our stocks of capital, natural and so forth. Is that what you mean? Is that the kind of thing you would envisage?

Liz McKeown: Ultimately, that is exactly where you want to be. The challenge at the moment is that you have with GDP a frequent and timely monthly measure and we are not yet in that position in terms of the data we have on natural capital, not least because some measures of natural capital make more sense on an annual basis if you think of, for example, the agricultural cycle and so on. That does not mean that we cannot imagine in the future modelling more frequent data but we are not there yet.

Q112 **Caroline Lucas:** What would you need to happen? Where would the resources need to be to gather that extra data? I take your point that some of it is not relevant on less than an annual basis, but what are we waiting for to make that happen?

Liz McKeown: We are not waiting for anything. We are in the process of enhancing our natural capital accounts at the moment and some of that is directly following from the Dasgupta report.

Q113 **Caroline Lucas:** To understand, does that mean putting more people on to doing that? When you say you are enhancing that, I do not understand what that really means.

Liz McKeown: We do have some particular projects that we are now taking forward with more people in light of that, yes. Perhaps to come to the broader point on communication, we are also thinking about how we communicate our environmental statistics and whether we are doing that in the way that has the most impact. There is a longer-term goal of doing these things alongside each other. In the meantime, what options do we have, for example, for having different environmental indicators that could give us some insights earlier?

Q114 **Caroline Lucas:** I do not know if you were in the room when Professor Moore was suggesting that it might be possible, at least on an annual basis, to produce some information on one of the many different environmental indicators, whether that is to do with air quality or water quality or anything else. Could that be published alongside the economic results, either quarterly or annually?

Liz McKeown: Yes, in essence, it is possible to publish things at the same time. It would be interesting. Would that amplify the environmental information or would it be a loss because the focus would still be on GDP? There is an interesting question. Are you more likely to get media traction on a day when you do not have a big economic statistic than when you have?

Q115 **Caroline Lucas:** I take the point that the media is one way of influencing policymakers but, if we are trying to integrate economic and natural capital approaches, at the same time as seeing a figure on economic growth or whatever, you were able then to see at least one of the impacts of that on a particular natural capital example.

Liz McKeown: Yes, absolutely, we want to look at how we can present these things together.

Q116 **Caroline Lucas:** How would we as a committee help that to happen? Would you need to be asked to do that by someone—forgive my ignorance—or do you think, "That is a jolly good idea. I will do it"?

Liz McKeown: We are already thinking through how we can communicate our environmental information in the most compelling way. I can talk about some of the things that we have done recently in that space. The information about the environmental accounts including the natural capital accounts now is already published in the Blue Book alongside the main national accounts, which is one presentation we already have of these items together. One of the reasons I mentioned the media is because we do present those things together in the Blue Book but that is not a way of getting traction with members of the public. With the best will in the world, it is not being read by a large number of citizens.

When I think about this question I think both about how we have the best influence on policymakers and how we improve public understanding of these issues. The solution on those things may be different.

Q117 **Caroline Lucas:** I take the point that you are already making progress in this area and it is already clearly on your horizon, which is fantastic. But if we as parliamentarians wanted to say that that process should be accelerated or have more resource put into it or whatever, what is the best way of communicating that to the ONS?

Liz McKeown: There is a number of ways. No doubt the recommendations of your inquiry now we would certainly consider and look at. We are always happy to engage with parliamentarians on the statistics that we produce, how they are used, how we communicate them to different audiences and the priority placed on different statistics.

Q118 **Caroline Lucas:** Would you commit to reviewing the prominence that the ONS gives to environmental accounts to provide us with more context on the environmental impact of economic policy?

Liz McKeown: Yes. In a sense, we continually review at the moment how we present the environmental information. Perhaps to pick up on a couple of areas that we have progressed on that, in the run-up to COP26 last year we saw that as an opportunity to give more prominence to our environmental statistics to a broader audience and we took a multi-pronged approach to doing so.

We wanted to bring climate statistics and I have already mentioned our climate statistics portal. That brings together climate statistics across six domains. It looks not just at climate and weather but at emissions, at the drivers of climate change, at the impacts of climate, mitigation and adaptation all in one climate portal at climate-change.data.gov.uk. The aim is that it is a one-stop shop so that people can go in and have that climate information all in one place. Up to then, if you had googled "climate statistics", you would be taken to lots of different places. It is very confusing for users. One thing we wanted to do was improve across the government statistical system how we presented climate information to users.

We also took the opportunity to do a series of articles around COP26. Coming back to the earlier question about the importance of the local level, of the 10 articles in the publication we did, which looked at a local level, at woodlands and coverage in your area and included searchable maps that you could look at, that was the one that got the most traction because people have that sort of interest in their local areas. We also held some events at COP, again to promote the use of climate statistics.

Q119 **Caroline Lucas:** I am so sorry, but because we are short of time can I push on to two quick things?

One part that I am still trying to get at is that I do not doubt that there is some very good work in putting all those climate statistics together but it still feels like it quite compartmentalised. You have the GDP figures coming out quarterly and other environmental figures coming out annually. It is not clear. My plea for you to go away with is to look at those places where you can get that interface, so you can see specifically the environmental impact of economic policy rather than seeing some environmental statistics here and some economic statistics there, and not seeing the connection.

Lastly, Professor Moore was suggesting, just as she was finishing her evidence, that there might be a state of the nation report every Christmas, where you might focus on one particular area and zoom in on it. Is that something that you would welcome?

Liz McKeown: Yes, absolutely. It is an important point. How can we use our statistics in this area generally, bringing statistics together to elucidate how the UK is faring across the environment, the economy and society so that people can understand?

I do see your point about bringing climate statistics alongside economic statistics, the interface that you want to pursue. Are there short-term options to get there that could bring different environmental statistics to bear as we develop some of the fuller approaches to integrating them into a national-account type of approach and if so, what would be in that basket of environmental statistics that we could publish in a more timely way, potentially alongside GDP? That is part of our current active thinking.

Caroline Lucas: We look forward to hearing more.

Q120 **Chair:** Andy King wants to come in but first, it is entirely within your gift to get a statistic into the official national statistics, to be recognised as a routine part of your work and published, or does that have to be approved by the sponsoring Department?

Liz McKeown: We produce new, experimental statistics quite frequently. Examples from ones that have been particularly resonant over the pandemic period but are now extending to other areas are two surveys, the Opinions and Lifestyle Survey and the Business Insights and Conditions Survey, which allow us to go out regularly to individuals and businesses to capture their perceptions of a range of issues. During the pandemic, we used them a lot to understand the impact of the pandemic but now we are using them more broadly. One thing we can do and have already begun to do is use those surveys to understand individual and business perceptions of climate change and also understand the actions that individuals are undertaking or not undertaking and we can generate new statistics on those things relatively quickly.

We are keen to be able to answer the big questions of the day and respond to new questions in a timely way. We see those two surveys that we stood up during the pandemic as being able to address a wider range of issues in the longer term and we are able to get that data out quite quickly, because they are frequent surveys, fortnightly.

Chair: Perhaps I should disclose that you are also routinely doing Covid testing, including of me. Andy King wants to come in.

Andy King: Very briefly: one reason why GDP or inflation or other numbers gets pick-up in the press is that bodies such as us and the Bank of England have forecast them and so not only is a number interesting because it is a number, it is interesting because it is higher or lower than expected. The story is whether you should be happily or unhappily surprised. If the environmental accounts in their entirety were being forecast in the same way as the national accounts are, you of course will know if you are happily or unhappily surprised by the data, but the general view of are we on track, off track, is different if you have a forecast to compare it with.

Q121 **Chair:** At the moment we are relying on the Committee on Climate Change to make those forecasts. Do you do any oversight of the work of that Committee?

Andy King: No, we don't. That is where I was coming from earlier. The role of the CCC is ever so slightly different to that of the OBR. The CCC is doing emissions.

Q122 **Jerome Mayhew:** Ms McKeown, the UK's national accounts follow international guidance on how they should be done. It is the UNSNA, isn't it? For my education, is that run by the UN? Who runs that? It is the UN, is it? I was wondering about that.

So we have the international system of national accounts and the UN is reviewing it at moment, so is this a good opportunity for the ONS to feed in your thoughts? I am sure you have, but could you develop that? Tell us where you have got to.

Liz McKeown: Thank you. It is a moment in time because the revisions are hugely frequent. At the moment we are looking at the system of national accounts 2008. The revision that is now being reviewed is for 2025 so you can see that it is a moment in time now and absolutely, we are feeding in.

There are four areas within the review, four themes: globalisation, digitalisation, communication and, of most relevance to this Committee, wellbeing and sustainability.

Jerome Mayhew: It is bang on topic.

Liz McKeown: Yes, absolutely so. Across the revision process, we are influential in the committees and the processes that are taking place. Part of thinking about bringing the environment into the system of national accounts—we already have the system of environmental economic accounting. That is what our environmental accounting in the UK is built on, that system of environmental economic accounting; it is consistent with that. That will inform thinking about the development of the system of national accounts in the future as well. It is a time to influence that process. It is too early, I think, to say—

Q123 **Jerome Mayhew:** How influential you have been?

Liz McKeown: Yes, exactly.

Q124 **Jerome Mayhew:** What you can do, having sat on nothing as illustrious as that but on European committees myself, you can get a flavour from the submissions of other countries as to whether we are an outlier or whether we are leading the pack, if there is a pack, or whether we are behind everyone else. Where would you say we are?

Liz McKeown: I would say we are part of a group of countries at the leading edge of thinking about how the environment can influence national accounts in the future.

Q125 **Jerome Mayhew:** Give me a flavour of the other countries involved. Who would be similar?

Liz McKeown: Some countries you would anticipate—Canada, New Zealand, Australia—and the Netherlands might be another example.

Q126 **Jerome Mayhew:** That is interesting. All right. And just to finish, the Kunming Declaration from COP26 on the Convention on Biological

Diversity called for biodiversity to be—an awful word; I don't think it is a word—mainstreamed into economic accounting. How far do you think this current review will go towards that aim? Is that one of its stated objectives or not?

Liz McKeown: Yes. Recently, one of the developments in the system for environmental and economic accounting has been the development of ecosystem accounts and that will, I think, form an important basis for the measurement of biodiversity. So, yes, it is there.

Jerome Mayhew: It is there or thereabouts. Thank you.

Q127 **Barry Gardiner:** Can I first of all thank you both for the work you are doing? It has been very exciting over the past few years to see the changes in government accounting that have resulted from that work. As my colleague said, it is exciting.

I want to pick up on the criticism that the Aldersgate Group had given of the Government's response to outline ways in which to integrate the recommendations of the Dasgupta Review into how we measure prosperity. In particular, they said that we have the autonomy to decide which variables we use in calculating GDP and if we began to include the variables identified by Dasgupta that measure natural capital and human capital, that could be done in addition to existing produced capital.

It also said that this could be done in the near term by using data already published by the ONS on the value of the supply of natural capital and, because GDP is assessed based on whether an asset value has increased or decreased against the previous year, adding the supply of natural capital as a measure would be relatively straightforward.

Do you agree with that and how simple might it be to do what they suggest? I think this picks up on what my colleague Caroline Lucas was saying about having something that did integrate it so you could see the interplay, the leverage between the two.

Liz McKeown: Yes. The full integration is methodologically challenging but it is possible and certainly plausible and we are working towards it, having the right framework in place.

There is both the inclusive wealth approach put forward by Professor Dasgupta and a complementary approach that we have developed, the spectrum framework. We are looking at how that national accounts framework can be extended to bring in natural capital and human capital the difference being that Dasgupta's inclusive wealth approach is looking at stocks. We are starting a pilot over the next year to look at developing experimental inclusive wealth measures along the way, as Dasgupta proposed. The challenge is that those measures need to fully bring in externalities and that has not been done before. Again, we want to see how that can be done in the period ahead and that will give what he has termed accounting prices. We will do that work and will see how possible it is. It does build on the data that we have collected up through the satellite accounts so it is exactly right from that basis.

To complement that, our spectrum approach again uses data that we already have but it focuses on the flow side and bringing those measures in. In a sense, you want to be able to consider both stocks and flows. The analogy, I guess, is the flows allow you to see an extended GDP approach and the stocks allow you to see an extended national balance sheet approach, bringing human capital and natural capital into them.

Relatively straightforward? I don't think it is. I think it is methodologically challenging and cutting edge, but important, and certainly we are very much invested in taking those things forward but we know there are going to be challenges in doing so.

Q128 **Barry Gardiner:** Give us some of the major challenges and perhaps even more important than giving us the challenges—obviously this Committee will be making its report and recommendations within that report—what are the most helpful recommendations that we could make as part of our report to the Government to aid you in getting on with that work?

Liz McKeown: The challenges are both in the data that we already have on the satellite accounts, the timeliness, the granularity of them, and the methodological challenge of translating them. For example, on the inclusive wealth side, how we think through the externalities and how they are measured and then incorporated is part of the issue here.

In terms of what recommendations are useful, endorsing the value of that approach and that work—the statistics are only as relevant as the decisions that are going to be taken as a result of them—making clear the value that those statistics will hold in the future would be extremely helpful.

Q129 **Barry Gardiner:** Thank you very much. That's great.

Mr King, can I ask you what lessons do you think can be learned from the experience that we have just been through in the pandemic for how we approach potentially catastrophic risks only this time the ones that we are talking about in terms of climate change, biodiversity loss and ecosystem breakdown?

Andy King: That is a big question.

Some of the conclusions we drew in the report we did last year on major risks were that there can be a tendency to fight the last war when the next one might be different, if one can use that analogy at the moment, and that some crises are abrupt and some take time. Climate change is not something that we are uncertain about. It is something that is just difficult and has global aspects. The final conclusion we drew was that ultimately we know that shocks come along and having the space to deal with them—in our sense the fiscal space to be able to afford to do the kinds of things that happened over the last couple of years to basically carry the country through the worst of it—is an incredibly valuable resource.

Some things go beyond OBR competence but I am aware they are happening within government. There has been a national risk register for a very long time and it has pandemics near the top for a very long time, not quite the one we were hit by. I believe work is ongoing on national resilience to those risks. That must be right.

The other, perhaps more prosaic thing that we found as we were doing the research is that two institutions have done scenario work on pandemics in the late-2000s, the US Congressional Budget Office and the World Bank. Both of those pieces of scenario work were very useful. They were quite prescient about how the economic shock would flow from the health shock. They were therefore quite useful in thinking through the kinds of things that you would want policy to be able to absorb. For an institution like ours, we have particularly taken the lesson that we should look down the national risk register and see whether we understand how a risk might play out, whether others have looked at it and we could look at the fiscal implications of the analysis they have done. You cannot tell precisely what shock is going to hit but there is a suite of them out there that you can think about and therefore be better prepared for. Ultimately, however, you may simply need the space to be able to do what is necessary, learning as the crisis unfolds.

Q130 **Barry Gardiner:** If I can try to interpret what you are saying—Hamlet Act IV, Scene II, "The readiness is all". Preparedness. Would you say that early intervention up front, saving ultimately higher costs in the future by not being as well prepared is one of the lessons that we should be taking away from the pandemic?

Andy King: It is certainly one of the lessons from the scenarios we did about mitigating climate change. I can probably answer specifically rather than generally. We largely drew on modelling that other people had done but all the modelling that we looked at says that tackling this multi-decade problem smoothly, progressively, rather than waiting and doing things abruptly, will have lower costs. What is happening right now with energy prices, this is an abrupt change to the price of carbon, not being delivered by policymakers, but we will see that this causes economic disruption. Whereas, steadily raising the price of carbon over 30 years so that the lowest-hanging fruit is picked each year will be far more efficient, which is what economic analysis of how carbon taxes can work points to.

Barry Gardiner: And indeed, as the Committee on Climate Change has been recommending. Yes. Thank you very much.

Chair: Thank you, Barry.

That concludes our second panel. I would like to thank Liz McKeown from the ONS and Andy King from the OBR for joining us today, Nick Davies for preparing our brief and members of the Committee for attending.